APOLLO 14 - NBC AND ABC NEWS - 2ND MOONWALK (2-6-1971)

https://www.youtube.com/watch?v=MPh-s1Di7Io (https://www.youtube.com/watch?v=MPh-s1Di7Io)

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From Saturday February 6th, 1971 NBC and ABC NEWS Coverage of the 2nd Moonwalk of Alan Shepard and Edger Mitchell.

- Coverage starts with the 2nd E.V.A already in progress. The 2nd E.V.A began at 3:11 A.M E.T and this video starts with NBC NEWS John Chancellor and Roy Neil in progress. At @42:47 into the video coverage picks up at 4:00 A.M E.T with ABC NEWS Coverage and continues until 7:17 A.M E.T. Apollo 8 Astronaut Frank Broman and Apollo 11 Astronaut Neil Armstrong join ABC NEWS Frank Reynolds and Jules Bergman for analyst.

  Apollo 14 Crew:
  Commander: Alan Shepard
  CM Pilot: Stuart Rousa
  LM Pilot: Edger Mitchell

00:00:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io)

[Music] nbc news presents the flight of apollo 14. journey to fra morrow [Music] brought to you by the golf oil corporation producers of more and better energy from oil okay john senator van oaker morning sander the dawn's really light as you probably know uh this has begun this extra vehicular activity the first thing they've got to do is go out and fix the antenna on the alcep the uh package of instruments they've got because mission control reported that the signal was weak and they'll fix it while you were just listening to mission control we have a problem already with uh mitchell what is that problem mitchell was describing some trouble with the cable in his wrist that's the rest of the suit of course as he was helping uh alan shepard to get out through into the hatch uh we'll just have to listen carefully and they're moving through that egress as they call it right now we'll hear them

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right now we'll hear them talking egress what should that do to him that is uh if you can't move that risk so obviously you wouldn't be able to load the tools on the transporter that little rickshaw device they have however they don't seem too concerned about it so uh i think our best bet is just to listen to it [Music] they're playing when they get on the surface andy will be the shepherd will go over to work on that antenna at the central station of the scientific experiments package while mitchell starts to load hand tools aboard the maps or rickshaws so that they can make the big and very important traverse to home crater which has been described to us by scientists as the most important single objective of this mission it should be pointed out that as a result of yesterday's briefing it was confirmed that mitchell's suit we're 131 hours 56 minutes the report from ed mitchell on the cable on his wrist this is a cable that holds the wrist glove at the right wrist we do not expect at this point for it to inhibit his mobility to any appreciable extent continuing uh in the final phases uh prior to uh egress that was john mcclure this is apollo control houston obviously in mission control houston up as we are um it should be pointed out that after the uh two astronauts returned to the lunar module yesterday the scientists recorded in the change of ship reefing the mitchell suit

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ship reefing the mitchell suit the spacer had leaked more than just oxygen they could have lit leaked more than shepherds but apparently they decided it won't wait you heard him talking to fred hayes capcom for this eva who almost made this trip himself hayes almost waited because he was scheduled and flew apollo 13 with the western japanese circus in our television picture now sandy we can see them moving that's our live picture from the moon that should be checked without first that's right [Music] circuit breaker [Music] they will be moving equipment very shortly cameras tools maps [Music] seems very frisky for this hour

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seems very frisky for this hour especially for a man that only had about four and a half hours of sleep and apparently a terrible meal he reported that he had finished the meal shepard said whatever meal it was mitchell preparing to come down there's the old shepherd rickshaw the right uh you're clear to come out the instrument that they use to carry all the various scientific experiments that they're going to do at cone crater you can see there s band antenna that big um now in our picture shepard moving it over that big umbrella in the center of the picture is their s-band antenna that's sending back this television picture of the voices mitchell reporting is on the porch coming down the ladder now [Music] a little higher [Music] that cheery report from al shepard

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okay they are out there about two and a half hours earlier than their original schedule okay let's try to get a picture of home sweet home right straight up there can yep do me a uh eva please okay okay now i'm done well if there's any sign of trouble up there they certainly don't betray it by their statements this is as cheerful as you can possibly be it more cheerful than you can possibly be [Music] okay sandy these are the pre-dawn hours for

00:10:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=600s)

sandy these are the pre-dawn hours for most of the united states for all of the united states for that matter but up there on the moon that sun has now risen quite a few hours since they landed yesterday morning [Music] roy yes this gym in new york right jim uh i was just going to make a comment on that i've been doing a little figuring well a moment ago it was either shepherd mitchell said the beautiful day of primary like it was another day of course it's not another day a day on the moon lasts 14 days and then 14 days of night earth days so if you figure it out the sun has moved exactly 14 minutes on earth that's the distance it would have moved about 14 minutes they've got a little higher thinning maybe just enough to notice you can see that from the shadows they're casting as matter back in still obviously early morning shadows have they ever figured out how to make the moon a resort you can go up there and get quite a suntan in the two-week vacation [Music] give quite some 10 and a 14-minute vacation too sure could [Music] okay ando okay very good

00:12:28 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=748s)

over here a couple of miners getting up to big goals but the rocks they hope to bring back should be even more valuable than gold rocks that uh scientists say may be a billion years older than the rocks brought back by apollo 11 and 12. a bit ahead of the timeline is shepard mitchell loading the met they will try to stay ahead of the timeline i would think sandy as they work this morning you may be put off by fixing the alsap antenna no it's an easy at the minute isn't it i guess it'll take a few minutes but uh they've planned that and built it into their plans in the morning and obviously think that they have time and plenty of it to uh perform that task without endangering the really important move over to home crater shepard should start holding over there

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shepard should start holding over there shortly that's about a 600 foot walk for him over there and a few minutes work and the 600 foot walk back but as we've seen their activities yesterday uh that's not much of a trek apparently on the moon or a jog than a wall yeah jim yeah the third man on the flight stuart russo of course is still aboard the command module which is circling the moon it's over on the back side now and he's going according to his uh i get the feeling everybody that alan shepard who is a mightily determined man has decided to bring this one in today okay the src to which alan shepard referred a moment ago is also known as the rock that's the container they use to bring back the rocks from the moon

[00:16:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=961s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=961s)

back the rocks from the moon lunar sample container rock box [Music] well for obvious reasons alan shepard has attracted the most attention on this fight but his partner up there edgar mitchell is quite a man himself he is the professor of a doctor of science degree in aeronautics and astronautics from massachusetts institute of technology doctor mitchell walking around on the moon is uh shepherd but very very impressive okay and uh [Music] we have a small scoop again please shepard reading out his net loading list

[00:18:09 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1089s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1089s)

[Music] okay there you go this is a 16 millimeter we're putting magazine hotel hotel a hotel they have named all those film magazines through various letters of the alphabet it was jakarta yesterday i think with jay i can't remember what there was a indianapolis indiana delaware over delaware grover delaware so now we're at hotel hotel a b c d e f g h well they'll have a lot of film to take to the drugstore eight magazines on that camera various cameras various film types lenses and things have different letters [Music] [Applause]

[00:20:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1202s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1202s)

[Music] thanks 25 minutes now since kevin depressed there are two specially adapted hasselblad cameras a tooth for their 70 millimeter cameras specially i'm not sure i think they leave them on the moon do they i'm not sure we can check that let's say bring one back to me i'd love to have it that's right jim they do leave them all right they're electric models too you don't have to wind them just pull themselves next they'll be sending pictures here and two and a half magazines two spf just pointing out to those of you at home with one or both eyes open that is a simulation picture which we've kidding that's why we need some more

[00:22:06 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1326s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1326s)

okay they have of course memorized these checklists but they are wearing those little booklets on their wrists which carry the checklist as well alan bean will be with us a little later this morning john and uh we've asked him to please bring along his checklist the cup list so that we can get a look at one i always when i first saw one i wished i'd had it in latin 101 for longer cuffs [Music] all the way back now put this one down here yes sir i think one of the things we may hear today is a lot of sort of heavy breathing as they're making up their way up those steeper slopes and i'm not sure i understand and i'm i i guess you probably would the microphones they're using are voice activated aren't they that's right

[00:24:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1440s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1440s)

right does that give them kind of a breathy sign right now no they as they start to breathe heavily john it makes the microphone trigger their transmitters to go on and off right now people here we go it looks like he's pulling the right shot isn't it yeah get mitchell uh pulling the uh pole cart yesterday i was shepard who was pulling that mitchell doing the other test now mitchell's doing it rank obviously by the scientific bay for uh offloading of the magnetometer on apollo 12 they took a magnetometer that they left on the moon to measure magnetic fields and solar wind and other things just and they got some interesting readings from it this time they're taking a portable magnetometer that they'll be able to set up in various places individual readings and radio them back to earth as they take them

[00:26:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1561s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1561s)

yeah the magnetometer also is helping to solve the mystery of the earth's crust which is a a serious mystery since it in fact it may help us to learn about our own planet and uh we've got a couple of them up there now and they maybe get enough data to tell whether there is as i've always wanted green cheese right down at the middle i know there isn't any in the surface it's going to have to be number one amazon all right they've gone into what they now call a traverse in a short walk on the moon [Music] offloading the magnetometer from the science bay

[00:28:23 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1703s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1703s)

in your live picture there they have traversed or walked around behind the lamp and they're loading up the pardon me the magnetometer and the actual walking part of their walk will uh will start in just a few minutes [Applause] first time sandy [Music] six

[00:30:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1804s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1804s)

[Applause] um the magnetometer now on the net well uh we don't want to carry uh too long on that run uh we're about two minutes behind starting out in settings you can leave them just as they are right now uh that are on the tv or right now are good you don't want to have to do it closer the settings on the camera right now should be good [Applause] okay shepard bouncing into your screen with the uh red wraparounds on his arms and legs bomb bands legs out in the direction of a cone crater

[00:32:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1924s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=1924s)

okay you look like cohen all right we have a little bit of a glare across the center but in the background we can see the quest to come okay it will probably be off the camera to the right those pictures that you see running diagonally across your television set that was a shepherd moving across the uh field of view there oh landing pattern in an airport that's hilation it's a reflection because a little bit of the sun apparently is hitting a little bit of the camera or there's some reflection that's coming in it does not indicate any system with lights or tracks that actually have been set up on the moon but if they leave the camera in that position i will be looking at this for quite a while giving me apparently alan shepard has decided to take this traverse capone crater before going back to fix that scientific package [Music] 11 o'clock i guess the rise in our screen moving from left to right is cone coder i didn't think we'd be able to see it i'm not sure i see it now he sells it in direction and they're moving that way is that roy yes we're looking up the slope of the hill which takes you to the top of the crater of course we can't see down in now this is remarkable because we

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now this is remarkable because we thought it was good to see it and as i think astronaut schweikert was pointing out yesterday uh [Music] [Applause] big depression over here again proceeding directly towards the center point pointed out we're passing north of north jupiter the area over which we are passing again parked by craters however the land is generally flat right here we have a bit of a uh i was gonna say mesa but i really don't think amazing it's more of a ridge which extends to the south east uh almost normal to our passive travel i think point a is probably not has now a lookout a part

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okay that means that point a is in fact down in the valley all right you're out referring to weird that's a crater there's quite a few fairly easily populate these creams directly from concrete of course we'll uh get samples of these a little further along a little further maybe we can show a picture of it a little bit later on but it looks as if it's an impact of two or three [Music] meteorites any basic changes meters to the west of point a all right okay i think i have another [Applause]

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right between [Music] 84 mitchell nightingale we just got our track at 71 and ct and c3.3 we are passing uh exactly on the south rim of those two now [Music] [Applause] and are they pretty widely spread shepherd mitchell moving toward their first stop they're fairly generally scattered they may form a pattern when they get to the top and come look at them and play a view photo thank well it's pretty close i don't think it's exactly there but it's closed oh [Music] the [Applause]

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[Applause] and the population of uh larger rocks or perhaps the small polar size is more problem here [Applause] okay this is probably pretty good this is [Applause] here quite often like raindrops or a very few raindrops inside obviously they haven't but it's that sort of texture and places yeah i think um i was just about to say that there's a relationship between this texture and these uh all surface pebbles [Applause] okay [Music] [Applause] okay however you've heard enough of it now to get the flavor of it it'll be like that very much for about the next four hours and we'll be with it all the way and we'll be back with it after this message from gulp believe it costs less than their regular what did you say golf has a new low-lead gasoline that costs less than their regular that's what i thought he said but how many cars can run on it without knocking i'll find out

00:42:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=2520s)

millions of cars can use new gulftain low lead instead of some other low lead that costs more sir we have a problem nbc news will continue with its color coverage of apollo 14 in a few moments we pause now for station identification stay tuned to nbc for continuing coverage of the apollo 14 mission we switched to abc news for eva2 coverage at exactly 3 am central standard time february 6 1971. [Applause] the astronauts are now at station a which is about 1300 feet from the land there they're carrying out the uh experiments that were assigned to them with the uh the lpm the lunar portable magnetometer just to measure the magnetic fields on the lunar surface actually living for 56 days in outer space eating and sleeping and working in orbit around the earth go ahead with the coordinates someday three astronauts will right here aboard skylab the first manned space station during this incredible mission they will find out what types of work man can perform during extended flights

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they will learn how the human body reacts to weightlessness over long periods of time and on board this space shot of the future they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table nutritious tang for breakfast tomorrow we'll be back with more on the flight of apollo 14 after station identification see the hawaiian open golf tournament from honolulu today on abc which is their first main stop on this long uh geology traverse which will take them right up to the rim of cone crater let's listen now to the moon to ground conversation [Applause] 6.5 okay i got all uh already set but that was the highest real reason roger high scale [Music] all right this is the picture that we're going to be seeing

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going to be seeing he's he's giving some serial numbers here so i'll just go ahead uh this is the picture that we'll be seeing for quite some time it is not uh perhaps very instructive uh oil so uh we're going to uh we have jules bergman now at our own relief map here at our space headquarters and he'll explain to you now just where the astronauts are going on the surface of the moon and you'll have a better idea then what all this conversation means and perhaps be able to to locate them okay jules are you set they're at station a right now could show us what width where they actually are and what they're doing at this moment it would look something like this this 8x12 visual relief simulation map made by the space agency with the help of geologists shows the entire fraumauro site landing area beginning with the placement here of antares the lunar module after it came in and landed came in over triplet and landed here between triplet and doublet and of course they worked out here yesterday on eva one uh as they deployed the alsup lunar scientific experiment package that package they have to go back to to align the antenna at the end of the second moonwalk three or four hours from now now the uh if uh our camera man by faithful joe shea will hand with us here we'll return to the lunar module and show you what they've done after they unloaded the camera by the way is sitting right here can you see that ed and it's pointing up sun off this way along this line we've drawn cone crater is up here let's pull back if we can one kilometer a little more than four thousand feet actually less than four thousand feet forty five hundred feet as they do the walk away from the lunar module they are now headed toward station a if you will which goes out at an angle like this 1300 feet away from the antares lunar module at station a they deploy the lunar portable magnetometer they'll drill out core tubes to a

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they'll drill out core tubes to a depth of several feet if they can retrieving samples of the lunar soil to help geologists and scientists determine the age of that soil then they'll progress on to station b which is around 800 feet away from station a all the time of course working their way up a gentle slope toward cone crater further up here after station b they move along a line like this another 1500 feet and then begin to work their way up cone to the left of flank crater which is in here and then they'll reach the rim of cone right up here where you can see those boulders that our lunar orbiter satellite filmed some years ago those boulders the size of automobiles that mitchell will attempt to pitch over the edge down into the bottom of cone like that while shepard photographs it and gets the tracks of them going through and seismometers listen to them the pictures of those boulders should indeed be fascinating then they'll work their way around the edge of cone around the rim of here down taking more samples as they go down to flank crater again over here station d station d is the way they refer to flank uh taking more samples at station d back down toward outpost crater over here which is uh just beyond which is station e and again they'll deploy the lunar portable magnetometer for more readings do more core tubing work dig a deep trench at mitchell's expected to dig while shepard photographs it and then they'll gradually start working their way back toward the limb stopping here at station f for a triple core sample more photographs and more set documented samples before heading around here around the edge of triplet they'll skirt inside these this rim between triplets crater

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this rim between triplets crater craters one two and three if you will they'll skirt this rim coming back in for more samples mitchell will work down around here shepard around here and then both men will end up back at the lunar module some three hours from now if they hew to the timeline the way they're supposed to what what will emerge out of all this out of this historic traverse this lunar geological expedition while standing by in our houston studios at the space center is dr jack mccauley of the u.s uh geology surveys astro geological center in flagstaff jack what kind of knowledge will we get uh out of this traverse well this this is uh very very clearly the um the longest and best uh of this sort of uh thing that we've done so far and uh what we hope to do is to get samples as we indicated yesterday that came from deep within the imbrium basin and this will allow us to say something about the early history of the moon the interior of the moon and also something about basin formation itself this is uh something that we still don't know a great deal about and we don't know the nature of the material thrown out to these distances and uh we um we hope that from this very very excellent traverse uh that will get this kind of information dr mccauley this is frank reynolds in new york i believe it was ed mitchell mentioned the the raindrop-like effect spattering the surface there as they move out to stationary how do you interpret that what does that mean you know the rock scattered over the surface there right i didn't uh hear you too well uh on that i think i know what you're talking about this is uh glassy material that

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this is uh glassy material that uh apparently it was produced by impact and uh splashed out on the surface of these rocks cone crater been fairly well established as the result of an impact right the result of a substantial body hitting it right it has all the characteristics of an impact crater it's not volcanic but probably not it has a sharp rim the floor is well below the level of the surrounding terrain they're very coarse blocks thrown several crater diameters these are all the kinds of things that are associated with impact craters and some of these rocks that they're beginning to see i think they mentioned or they were questioned about whether they form a uh pattern i suppose when they get to the top of the ridge they'll be able to see whether they are actually positioned in a sort of ray-like effect to show that they did come from tone crater is that what they're looking for well yes actually if you look at the edge of the crater as you can see it on the screen right now you can see what appears to be a plume of rocks extending from right to left across the near rim and this is one of the things they'll probably comment upon [Music] frankie if dr mccurley can work with me i'd like to kind of do a a visual relief sighting showing the terrain they're climbing and going into the actual hike it is can we move camera three in here a little bit over my shoulder to show a cutaway if you will of this terrain and uh the slope that they're going through as they climb up jack as we've discussed from triplet to weird to flank the other craters lords can camera three come in real close here to show this terrain increase what kind of height increase are we talking about jack if they're walking through uh they'll be going up a total height of

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uh they'll be going up a total height of about 400 meters i mean 400 feet the crater itself is about 200 feet deep [Music] should that be any problem for them that kind of climb with the load they're carrying no i don't think so in the lunar environment they really get a bonus so to speak and it's in spite of the bulky suits and all the other things they can move right along [Music] as they work along the top of cone jack i know you've taken exception to the term some reporters have used unfortunately including me that it was dust they were encountering will they find loose soil up here on the rim of cone or what do you expect yes actually there'll be some fine material mixed with the blocks and the material will be mostly the debris thrown out from the crater itself it'll be poorly sorted what about their footing are they likely to slip with any chance of falling into cone which seems to have a lot of people worried well i think that they ought to be fairly careful up there the uh lip of this could be quite unstable and uh there may be places where the surface may be quite soft so i think they'll probably move along rather gingerly jack what is cone how did it get there we've discussed this before uh what words what event form cohn how long ago oh cohn is according to our best estimates is a fairly young crater it's what we call a copernican crater it happened in the last part of lunar history and it's super posed on this debris blanket that

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blanket that we've been talking about so those blocks are part of the underlying debris these blocks these blocks here that were cast out by the impact of some some large meteorite that's right you say a fairly young crater but young is a term to be used with uh how shall i express it discretion discretion is an excellent term uh four million years five million years how what what does young mean well these are some of the answers that we may get from this expedition the age of these very young craters hasn't been too well documented and it's possible that by sampling here uh getting the so-called exposure ages that we may be able to uh date this event and that will be very important because it will it will add to the uh zeroing in on a time scale right dr mccauley is this process still continuing i mean are our craters you know still uh occurring yes uh they are hitting the moon intermittently the process is occurring even on earth if you go out on a warm summer evening sometime you'll see so-called falling stars these are little micro meteorite fragments that are falling in jack to return to cone credit here for a second if the cameras can pick it up again how large a thing are we talking about by my measurements it's about a thousand feet across from rim to rim and whatever you they get 250 feet deep down to the bottom of the crater floor yes 250 feet right that's the estimate that was a fairly sizable uh geological event that formed that cone man as events going this is about the size of some of the

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the size of some of the biggest craters produced on earth there are some craters that have been formed by nuclear explosives and uh this isn't about the size that size rain which uh artificially produce crater that's what i'm trying to say right this is not a terribly large crater though is it uh dr mccauley in terms of others on the moon no by lunar standards this is quite small it's a mediocre crater frank i think uh dr mccauley would say or a fair to middling credit jack you raised this point and frank did too of these events continuing i don't know how many how many meteorite strikes you figure hit the moon each day and create new craters but one question that's occurred even to me as well as to millions of other people i think is here's the lunar module sitting back here an object about 20 feet in size let us say measured across the top what are the chances of a lunar module or an object like that being struck itself by a meteorite impact while the astronauts are on the moon well these events don't occur at any one place very often and it's essentially a problem of statistics somebody a long time ago and i don't know whether this estimate has been revised said that you were probably safer walking around on the moon than you were crossing a new york street in terms of your actual hazard i feel you're safer in a blast furnace than crossing a new york street there are less meteorites than taxis right frank you have any other questions for dr mccauley no i i think not uh thank you very much dr mccauley we'll certainly be calling on you again as yeah have we left out many geological points you want to make at this point on this traverse well i've been listening to the voice and it looks like they're doing a very

[01:00:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3602s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3602s)

and it looks like they're doing a very good job as they're going along here of documenting and describing and that's one of the major objectives to really squeeze this traverse for all the possible information we can get thank you jack we'll be back to your short lives return now to the moon and the air to ground signal in the picture from that camera there it is with the sun's ray still wool beaming across the lens shepard mitchell invisible to us at this moment frank can you make them out from your monitor no no they're they're gone jules uh okay the camera of course has not moved uh and the astronauts have uh moved on to uh station a so they are out of uh camera range but of course we can hear them quite well there's a lot of conversation going on back and forth okay [Music] [Applause] this is frank reynolds with jules bergman and with frank borman who has now joined us and frank of course was the commander of apollo 8 and uh frank things started a little earlier today than we had anticipated apparently they decided to come out oh about about two and a half two hours early isn't it right uh it actually started frank with uh al shephard and ed mitchell during an evad briefing last night saying they needed an extra half an hour or so during the second epa and moon war then it turned out that the alpha central station antenna was not aligned properly they're getting only a weak signal so they have to go back to that eva one site at the end of the second eva which means an extra 45 minutes or so so the crew ended up get getting about five and a half hours sleep getting up almost four hours ago and beginning the second dba about two hours early how's the spacesuit mitchell space shoot is i'm glad you

[01:02:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3720s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3720s)

mitchell space shoot is i'm glad you brought that up because it's amazing how stories run rampant on the wire services and other media at times even on abc news last night i was uh sure never on abc news they didn't consult reynolds for myself the problem was well we went out and passed me up uh mitchell's suit has a loss rate if you will that's slightly uh higher than spec like but it's no it's no serious problem and there is no real leak you could say it probably has a bad o-ring somewhere along the way a lot of us do sorry about that what's that a seal uh an o-ring being exactly like that a seal that would go over uh a hose inlet or a matching thing or a uh articulating joint from a swirling joint well obviously it's not causing them any difficulty because they've been very anxious to get out there and they've been out now for some time been on the moon uh for 24 hours now let's go back to air to ground you'll probably get some of that from the bottom yeah we're still at station a right okay he's [Applause] uh okay i thought the um

[01:04:13 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3853s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3853s)

[Music] hey total timeline for the party night there appears to be a i believe they came from the crater to the north of the sampling site other than that the civil course airport site is not unique all right now apparently they haven't encountered anything uh very different as yet just said that it's not unique you know

[01:06:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3960s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=3960s)

just said that it's not unique you know to what is interesting though is that on this traverse to the east i don't think there's any significant significant in direction necessarily uh shepherd says they found more rocks and more boulders distinctly more than to the west which i suspect is likely just a function of the getting closer to cone and the ejecta from the debris hurled out 133 hours three minutes of ground elapsed time one hour 15 minutes since cabin depressed well that picture that you have been seeing is the same one that you'll be seeing for quite some time uh today because the camera is in that fixed position and the astronauts are working out of camera range we've had all this uh conversation the uh stories uh late last night and early today about the space suit difficulty that supposedly ed mitchell was having of course the the spacesuits are critical they've got to work uh properly and perfectly we thought about that some time ago jules asked at mitchell who was out there on the moon right now uh what would happen if either he or al shepard had a failure in his uh backpack systems i think it might be uh useful to hear what ed mitchell has to say depends on what portion of the backpack we lose the types of failures we can have are

01:08:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4081s)

the types of failures we can have are electrical failures communication failures oxygen or water problems if we have oxygen problems we have our ops or oxygen purge system to help us get back to the lamp the emergency bottle the emergency bottle if we lose water or cooling we can still use oxygen for cooling if we have to but we do have our so-called beast list or backup support the fancy hose yeah the fancy hose that allows us to exchange water from one crewman to the next and to provide for cooling electrical power failure is somewhat serious however we still do have the oxygen to sustain life till we get back communications failures so there are many modes of calm failures and we have backup ways to work around that so there is not any single failure that is detrimental to safety we can get back there are many failures that would cause us to short an eva or terminate sooner than we would like or reduce our capability in some way i guess i've been around flying so long i've just become a believer in murphy's law but looking at the worst possible situation supposing you and i were on the rim of cone crater a mile away from the lyman effect close to a mile and one of the backpacks fails either electrically or water or oxygen is there time and can you get each other back to the safety yes indeed the system is so designed that with a combination of oxygen from the emergency bottle in the worst case condition and using the water through the beeslist system the hose to the failed crewmen we can very comfortably walk back to the limb and probably even do some more geological exploration on the way it will not be a hurried rush rush job to

01:10:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4200s)

will not be a hurried rush rush job to get back and it has not been a hurried rush rush job as you've been hearing in the air-to-ground radio communication from ed mitchell and al shepard on the moon they've been moving methodically is the best way and determinedly in a very business-like fashion on first on the first moonwalk yesterday and now on the second moon walk one point we'd like to straighten out about emergencies or non-emergencies that sometimes get blown up to be emergencies the suit leakage rate the leakage rate of oxygen in mitchell's spacesuit is well is well within the normal operating specifications it is no cause for concern nor has it ever been a cause for concern frequently we run into what you might call an information gap in dealing with the space agency especially during a mission where fig figures come out or or words are issued on the air-to-ground radio and often technical competency is lacking and properly putting putting them into perspective in time it is our mission to put them into perspective and we are here to tell you that mitchell's suit loss rate on oxygen is well within normal operating specs okay jules they are only about five minutes behind their timeline or schedule right now so they are obviously not in any great rush we'll have more on apollo 14 right after this message [Music] the morning as few men have seen it the sight of our own planet coming up over a strange horizon in space earth rise now two more men will see it and with them tang the orange flavored instant breakfast drink with more vitamin c than orange juice nutritious tang for space men and earth families we'll be back with more on the flight of

01:12:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4320s)

we'll be back with more on the flight of apollo 14 after station identification 13 baltimore let's go uh back up to the moon now and listen to this conversation between them michelin shepherd about 1500 feet away from the length hugging finished their work at station a moving towards station b describing the terrain can you see the boulders i think i should be able to spot that little chain of craters just to the south of us if that's where we think we are shepard mitchell uh describing the terrain on their walk from station a to b [Music] that's probably weird right up here i'm probably not even with a wave right now although we can't see her orange that's weird that big one right over there huh yeah that's what i say i think uh deep crater right directly ahead of us um

[01:14:12 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4452s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4452s)

the area being walked through as a valley that puts them about 1800 feet away from the antares lunar module still about three thousand yeah i don't think you have to worry too much about the exact position of uh your appearance okay i think we're very close to it i think this critter we just went by probably yet but it's very hard to tell i don't see anything else that might be at least the next crater up ah i spotted it let's trade the next crater up and so this one right here we were talking right there in front of you uh

[01:16:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4564s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4564s)

i'll go ahead and give you a slight description the area here is in an area of considerably more boulders with larger boulder fields more numerous boulders than we've seen in the past looks suspiciously like like one um however where we are now we're about on the edge of a general boulder population lining the flank of uh called crater now they're not too numerous at this point they're somewhat patchy there's a lot of them buried uh a few of the smaller ones sitting on the surface these boulders are filament and [Applause] and about the only difference we can see is probably a larger number [Applause] of uh smaller craters i say probably uh there's numerous unless you really make a population count you can't tell [Applause] [Music] a large i'm guessing a larger number of craters probably secondaries from [Music] [Applause] perhaps and certainly a larger number of boulders lying around now most of these boulders are rounded there are a few angular ones there are few rocks with angular about angularities but by and large you can see edges that have been chipped off

[01:18:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4680s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4680s)

can see edges that have been chipped off uh indicating the beginning of a smoothing process and some of them are far beyond the beginning of smoothing they're worn down pretty well and most of the rough edges uh are where they have fractured and perhaps turned over most of them appear to be along fractures of where other rocks are sitting near them that might have worked to the part of that boulder uh roger ed uh l uh got the uh grab handle uh completed now and on our abc there's a relief map here for nasa we're tracing up the route they've taken to show you and they're working close to station b describing the terrain boulders let's listen in on them [Applause] the grab sample is a flight plan change the grab sample replacing the documented sample okay grab simple from the west room of bible clear back five november right we are standing on a fairly high point well not really on our point about halfway up the slope to our north and slightly to the west of us seems to be the low point in this area uh it's surrounded by a rim that's reminiscent of a very very old crater the topography doesn't show up on the map but indeed it's there about 500 yards to the north and uh west is the lowest point that i can see in this area

[01:20:26 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4826s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4826s)

[Applause] that's where they stand with the cameras they use a phone camera and a still picture and they're getting ready for the final hike up to the rim of chrome okay a little bit to see this flank up there and this is about where they should be that's flank crater right here as they move up this high terrain slopes and every two o'clock here between

[01:22:03 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4923s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=4923s)

there's hardly a level spot anywhere all ed mitchell doing a beautiful job of description he certainly is sounds like a trained geologist can i come on up towards cone we're getting a lot more buried rock bigger rock uh with our pointer here at our visual relief map we're trying to key in their progress showing you where they are at each moment as they move up for the top we might find some kind of a contact the uh range of concrete to the north is very apparent as we expected that it would be it uh stretches off into the distance and meets with the far horizon they're all smooth walls except the very freshest one that we're coming by a very fresh one now which is rubbly on this hey opposite to the crater

01:24:03 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5043s)

opposite to the crater at the straighter but 20 meters in diameter and about two meters deep uh well uh the board i think is uh you just uh passed the position of bmw looking about halfway between and we're starting uphill now fairly gentle at this point but it's definitely uphill okay baby this is the area they're working in mitchell about two thirds of the way now to cone crater the enemy is still very smooth as far as the uh areas they were able to pick out of course we're facing kind of a figure with course here being out of the

01:26:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5160s)

the area they're covering strewn with small craters that have diameters from 10 to 20 up to 60 feet as shepard has described help brother located if you can we're going by two very well fairly fresh craters i don't think quite as pricey and they're about 25 to 30 feet across and five or six feet deep five feet deep i guess the west first one is got small blocks nfc east one is very smooth [Applause] some of it looked like uh stuff that belonged there that had not fallen there yep oh there sure is i looked like some of that so-called rubble looked like it had uh might be the residual of an impact just lying at the bottom and houston we're passing a rock much too big to pick up there's a whale of a lot of glass in it all right how big we think this is the area where they are as we listen to their actually working their way up toward cone crater about a five thousand feet more to go up the rim to the top using our relief map we're trying to picture them as they talk and work their way up to the tip of cone to the grimace you can hear their winded they're working their way up this slope

01:28:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5280s)

working their way up this slope about a 300 foot incline from the lower area down by station b up around the flanks and the top of cone for a minute okay and now and ed uh why don't we take a little rest here for a minute and uh we'd like another camera count too capcom fred hayes telling them to rest they're sounding winded taking any pictures okay they've been sounding winded carrying that load as they work their way up there jules maybe we ought to point out that the pointer there somewhat distorts the size you know of these craters and so forth they're really quite immense right uh varying in size frank from the thousand feet across the diameter of cones from wall to wall to smaller ones like flank that are about 250 feet across to some of these they look like minute ones they are are out of scale in relation to the pointer smaller craters 20 40 60 feet in diameter many of them fresh this is these two craters here by the way are the ones we think mitchell just talked about when you mentioned fresh impact craters well al shepard some time ago mentioned that the edge of the cone crater stretches off to the far horizon it's a big one that's okay it wasn't quite clear exactly what he was seeing frank whether he meant this edge well while the astronauts are taking a rest we'll take a break we'll have more on apollo 14 right after this message [Music]

01:30:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5401s)

[Music] the moon more than a quarter of a million miles away and yet earth's nearest neighbor in space man has fed his imagination on it since the beginnings now he has set foot there leaving his tracks in the lunar quiet and with him the orange-flavored instant breakfast drink with more vitamin c than orange juice nutritious tang for space men and earth families in new york as we told you before the live television camera that is positioned on the lunar surface uh cannot show at this point just where the astronauts are working they're moving up to the edge of cone crater so what we're trying to do here with our relief map that we have set up in the studio and jules is manipulating that pointer we're allowing you to listen to the conversation of the astronauts as they report to houston and you can actually follow their progress this map is very faithfully uh reconstructed according to the known detail of the lunar surface and uh as you look at it you can get a very good idea of just exactly how they're moving along and uh what they're seeing right yes with this eight by twelve foot uh lunar relief map which has been used for visual simulation by nasa at the main spacecraft center made available to us we're kind of doing one and a half dimensional uh visual tracking if you will since the the actual westinghouse camera the astronauts are using can't follow them all the way out to recap and reestablish where we are and what's going on they set out about an hour ago from the lunar module antares site here near dublin crater triplet crater on this size worked their way over here up to station a 1300 feet away then another 500 feet to station b then began to work their way up the slope of a cone crater if camera 3 can get a little lower here you can see some of the actual height and terrain release that's very good this is an incline if this were zero feet which which of

[01:32:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5521s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5521s)

if this were zero feet which which of course it is not uh they've climbed about 250 feet so far they have another 150 to go up to the tip the tip and the rim of cone there coming a beam of flank crater they take just ending a brief rest period sounding somewhat winded if we track it right let's uh crank into the air to ground for a second and see if we can position them again uh with our visual relief map okay well shepard as they come out of this little rest break that capcom okay [Applause] is still unreadable [Applause] but it shows you where they are

[01:34:05 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5645s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5645s)

but it shows you where they are [Applause] passing on the north side this side uh roger out copy which leaves them this leaves them about 500 feet more to go they'll go around this direction up to the rim of home then work their way around here before heading down these are some of those automobile-sized boulders they plan to throw down into rim both shepard mitchell heart rates going up to about 120 while they were traveling uphill put them up away all right with the higher rates uh this occasion to the rest stop we're at 100 [Applause] okay we're at 133 hours 34 minutes of ground laps time okay i'll try again how do you read that flank being right in here as depicted on our visual relief map that heart rate of 120 a minute means they're both pumping working very hard under

[01:36:06 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5766s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5766s)

getting pretty steep [Music] soil here is a bit firmer i think than we've been on before um except around what uh the mounds in between craters where it's been thrown out the time argent seems to have a little firmer mitchell he and shepard have about 450 feet more to go before reaching the rim of cone up here with the client i think it seems easier guys sitting next to me here that kind of figured you'd end up carrying it up a little roll along here except we just moved faster during it the rim being so steep that it's easier and faster for shepard and mitchell just to carry their lunar golf cart or rickshaw between them uh i think this worthwhile taking a picture of it with the close-ups somewhere in this area where the vultures begin to get larger on this plateau slope near the tip of rim here while you're taking the course up okay uh

[01:38:14 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5894s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=5894s)

317 uh sun angle was eight o'clock uh the uh this particular one is only about twelve feet long by about four feet wide it's about one-third buried it's all very weathered there are some uh evidences there's some crystals shining through some of the fractures and i'm taking the hasselblad out of the rock and we'll take a pan now uh from this location help document our uh forest going to the top of chrome crater and right here the reference to carrying the met up to the ridge of cone crater the backup crew is here at the capcom console and apparently they had a bet on pre-flight we're at 133 hours 39 minutes ground elapsed time one hour 50 minutes since cabin depressed all right as the astronauts make their way up to the top of the cone

crater we'll pause for a moment we'll have more on apollo 14 right after this message these are astronauts training underwater for an incredible mission in outer 56 days in orbit aboard the first manned space station and two lonely space walks around

[01:40:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6002s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6002s)

space walks around nasa trains them underwater in space suits with full equipment load because zero gravity is simulated here better than anywhere else on earth and once they're walking in free space outside of the space station this training could mean the difference between success and disaster inside the skylab they will have all the comforts of home a bedroom a bathroom a work room a kitchen and they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table nutritious tang for breakfast tomorrow we'll be back with more on the flight of apollo 14 after station identification at luskins you get space-age values of tomorrow today like the newest philco ford color tv a big 25 inch green color tv luskin's down to earth price at only 488 and how about the space age special a vinyl flight bag luskin's moon landing price and only 3.88 so blast off to the luskins near you towson pimlico opposite east point and in glen burnie open every night till 9 30. mission it's the goal that they've been striving for and when they get there they'll have not only a tremendous view but they're also going to be able to tell us a good deal about that most interesting feature of the lunar landscape and terrace has been on the moon for 24 hours and 46 minutes actually this eva has been underway for almost two hours at this point and it's probably going to last a total of about five hours we want to go back now to our relief map here so that we can give you some idea of exactly where the astronauts are and we'll listen to their conversation

[01:42:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6124s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6124s)

and we're hearing al shepard describe he and ed mitchell at the top of the rim of khan crater in this area pulling the net behind them now working hard they'd raise the cooling rate on their backpacks now they're lowering it again working hard they'd raise the cooling rate on their backpacks now they're lowering it again going uh

[01:44:05 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6245s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6245s)

now this is surprising to me and i expected it to be more like that but it did not at least i'm not sure that was blank we were out of there wait a minute dude and you can hear them breathing hard [Applause] they'd like you to take another stop here capcom yeah we kind of figured that from listening to him okay well now that's a brand new

[01:46:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6361s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6361s)

[Applause] okay we're on uh 157 and a half now okay it's at least i would say we'd probably do better to go up there say that the room is uh at least uh 30 minutes away we're approaching the edge of the boulder field here on the south white look at the grip and what i'm proposing is as a turnaround point that seems to me that we spend a lot of time in traverse if we don't and we don't get very many samples uh roger help and just a couple of questions they have up now that like uh your notes if you do see any dust particularly on the top surfaces of boulders in the up in the area and any comparisons uh between [Music]

[01:48:16 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6496s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6496s)

clone ejector and then when we head down soon we'll be able to see these subtle variations and rock types a lot better than we are right now uh roger what has happened here shepard and mitchell making their way up the slopes of rim of the rim toward cohen have been deceived by the sunlight and shadow as to their actual position which is now somewhat in doubt they at first thought they were up here very near the rim approaching this boulder field they apparently are somewhere in this area now and it's a hard steep incline shepard estimating at one point an 18 degree slope now saying it may be steeper and estimating it'll take him 30 minutes more taking mitchell 30 minutes more to make their way to the edge of the rim and then turn around they're in this area they've been ordered to rest after their heart rates began to rise and their breathing went out oh let's give it a whirl [Applause] oh [Applause]

[01:50:08 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6608s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6608s)

some very light gray fine underneath the uh timeline are we okay uh as best i can tell right now about uh 25 minutes down shepherd now mitchell now in the throes of an agonizing decision having fallen behind on the timeline with the going tougher than they thought can they reach the rim of cone which mitchell wants to do and look down into the emptiness of that crater and throw boulders down or should they settle for this and work their way back what we're looking for okay uh alana viewed your essay at the uh where your [Applause] scientists and doctors in the back room thinking it may be too much to continue on take too long wanting them to stop here okay that decision i guess was based on al's estimate of another at least 30 minutes and we cannot see that from here it's kind of your judgment on it

[01:52:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6720s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6720s)

so we're three quarters there mitchell reporting there three quarters of the way two cold craters will stand by yes shepherd on this old allen leave them i think what we're looking at right here polar field is the stuff that's ejected from chrome about the lower most part which is what we're interested in okay well press download on the keyboard [Applause] we'll stand by standing by in our houston studios neil armstrong the first man to walk on the moon we'll ask him to watch and listen and comment with us here over our reef map neil certainly enjoying this activity it sounds like allen that are having a ball while working hard yes uh i can believe they're really really enthusiastic about the challenge of getting up to the top of that hill i know i'd be faced with the same kind of a difficult decision in uh trying to balance between uh doing a very good job on what they know they can do or trying for them and hoping that there would really be some uh answers up there that sounds like a really rugged piece of terrain up here a lot rougher than the sea of tranquility yes it certainly does and uh i can

[01:54:03 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6843s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6843s)

yes it certainly does and uh i can believe from the sound of their voices that those are pretty steep slopes and they they are getting a good workout i was a little surprised to find shepherd more conservative than ed here ed wanting to press on shepard's saying maybe we better not i guess the responsibilities of the land right neil we're going to play a little game here of cranking in the best of the air to ground and talking in between if you can work with us that'll be fine from here view from here sounds like they must be up in this area here somewhere yes apparently they're high enough that they can see the entire panorama now and i suspect they can look back and see the limb and some of the scientific experiments from that distance may not be quite as good

[01:56:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6960s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=6960s)

this is beginning to sound like a good argument for a lunar roving vehicle neil certainly that would be a good use it sounds as if the terrain is quite rugged though they talk ed talked about it being very chilly and uh no screen spots uh quite large rocks and uh of course that might be a good challenge for our rover too may not be able to negotiate this stiff terrain right and they're deciding not to abandon the net they need the tools for sampling and time is what capcom fred hayes and mission control is concerned about will they have enough to get the med up there get the pictures and do the rest of the world and the criticality of time here becomes the fact that they still got a mile after this to get back to the limb and then perhaps 45 minutes more to work with elsa neil have you been able to get a handle on what the problem is with the all sub stations uh no i don't have any additional information on that jules but it's going to take that's 600 feet

[01:58:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7081s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7081s)

but it's going to take that's 600 feet or so each way from the antares it's going to take another 45 minutes to get there and back and adjust it won't it i i just know that they they would like to address that antenna and beyond that i'm not sure this uh reminds me of the last last phase of our extravehicular activity on all 11. right this sounds like they're really pushing hard up a steep slope and breathing very hard neil yes anytime you're bleeding hard you trigger that transmitter every every time you breathe and hear every breath and that really accentuates the situation good point it's a voice and breath actuated uh my microphone right neil we have frank borman here in our studios in new york too i think he might like to chat with you a bit hi nia hello frank good to hear you one of the things that occurred to me was even though we see their heart rates uh quite high at times and they're obviously working very hard i've only on two occasions heard them mention going uh out of minimum cooling on these uh uh plss's it must be a very efficient heat transfer unit yes uh it's an exceptionally good uh good unit i found that i could stay at minimum all the time and only had to go to uh the medium flow position when i was running across the surface or pulling uh heavy loads lifting the equipment back into the lunar mountain i i think that it would be uh almost impossible for a human being to exert this kind of effort on uh on the earth too don't you neil yes the moon is a great friend in that regard i guess we couldn't uh

02:00:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7201s)

regard i guess we couldn't uh couldn't tackle it if it had the earth's gravity level and uh something we'll have to think about when we start tackling the planets i i hate to think of five hours in a hard suit and it's a practice exercise oh boy about another hour on the lights of these studios and you'll both find out what that word looked like we're down here we've got to go there working on the rim on the rim of cone let's listen into the air of the ground a little bit uh we put shepard's backpack on intermediate cooling to take some of the extra workload and cool them down a little bit more okay sounds as if they're up on the rim but uh not yet able to get over to the position where they can sit see into the fader now it begins to sound like it the whole area must be strewn with boulders kneel but they're working their way around i i agree with me i suspect that that's that's the case but i noticed mitchell mitchell won't part with the mat he

02:02:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7320s)

mitchell won't part with the mat he doesn't want to leave behind well he said they need all the tools yeah right okay and you have to be pretty uh pretty careful about getting uh too close to the uh the size of that crater too it's a softball card as they're going through this boulder field and route to the rim of cold crater well that's something that comes up you know suppose they do slip suppose they fall down uh that's right well you you heard that al did slip once and had to get the it's helped to get up if they slip on the slope it's a somewhat different matter isn't it and they do carry a 100 foot rope or television crater okay

02:04:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7440s)

[Applause] well they appear to be at the higher highest elevation but they evidently haven't found the rim yet just looking at the boulder field uh close to the rim you can see where they would be on uh something that appears to be rather level and yet not no exact action to go in to get to the uh the edge of the crater i've noticed that it's difficult to determine just exactly what the vertical uh is due to the low gravity there and that and the hills in the area and it's also difficult to tell just what is horizontal so uh in the case where they're up in the top with slopes probably less than five degrees they really have some difficulty in in uh figuring out just which direction is uphill and it occurred to me neil that some of our listeners may be wondering if they uh are apt to lose track of the whim frank let's get this description uh from allen at the top of the rim here roger [Music] okay okay documented a very definite difference in color

02:06:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7561s)

a very definite difference in color which was definitely almost quite in color a very definite difference in color which we'll document we notice that beneath this dark brown regular there is a very light brown [Applause] [Music] that one one more experiment being dropped as they begin to run short on time you know it occurred to me that some of our listeners may be wondering if they're absolute side of the limb but i i suspect they could always follow their footsteps back there there's not too many other ones up there there that's a good point frank the terrain is so rolling that wouldn't it all be surprising to find that you did lose sight of the lamb it's very much like being in uh swimming in in the ocean with some maybe 10 to 15 foot swells you when you get down at the bottom of the swells it's pretty difficult to see very far all right girl and um do you think you'd be able to deploy and take the second and last lpm reading at this location

[02:08:06 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7686s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7686s)

is the by dropping the polametric experiment they've saved about 15 minutes on their timeline neil you raised a really interesting point if we can get to it in between the air to ground here very good the difficulty in finding your way and knowing heights because of the 1 6th gravity and also the tricks that the lunar lighting plays on yes [Music] the vertical and the horizontal were about five times clearer than they are here on earth two hours and 15 minutes into the second aviator room walk how much time is left now how much time is left before they have to get back to the left well it was with with the original half hour extension frank it was four hours 15 minutes but they will they then extended that a half an hour to four hours 45 minutes if i'm reading fred hayes correctly but they they've used up that extension i believe so that's why they're dropping some of the experiments like this parametric experiment but they've got a long way to go in a large workload if i make it right deal yes they certainly do but then there's the good news that it's all downhill from here yes

[02:10:06 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7806s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7806s)

neil i noticed earlier ed mitchell said that the objective they're seeing in the rubble is not at all like the nevada test site so evidently they're encountering some uh some differences on the moon from what they have practiced on here on earth how was your simulation did you find it pretty much uh the same as hawaii and some of the other fields that you use a gather sample no i guess our observations were that it was somewhat somewhat different from anything we'd ever seen on earth some of the geometry was the same there were enough differences in the nature of the surface and the material there that you really couldn't identify with the things we'd seen here on earth [Music] it really will be different than anything we've seen before on any samples that had been brought back from the previous flights in an old manner 47 frank ed doing pretty well i mean alex did pretty well well he used to spend a lot of time on the track over at the command spacecraft center and almost every noon you'd see him neal you saw him over there every noon didn't you yes sir

[02:12:17 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7937s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=7937s)

sample bank number or not lpm [Music] west mitchell's working with the lpm lunar portable magnetometer measurement on the moon they've apparently stopped short of the rim of cone up here are somewhere in this boulder area and will not be able to reach the rim will not have the time to get there before turning around that's big stuff fred hayes is really doing a great job today he's very uh right on top of everything capsule yes fred has a lot of experience having worked with the lunar module early in the program and being back up the limb pilot on my flight and then just the u.s of course the lunar monster

[02:14:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8040s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8040s)

the u.s of course the lunar monster pilot on 13 so he's very well qualified to help him in every way from the ground he may be living vicariously too since 13 wasn't able to land he studied this very terrain very many times i'm sure i'm sure he has i'm just like me and i know on well apparently we're not going to be able to push any rocks down the slope today we're peeling off the data from the normal commodore experiment i gather right now right he's got to read it off three times frank in different uh directions to get a stable reading and feel the strengths up there [Music] each flight being the most complicated and dangerous debate and that's really not a trite way of putting it because certainly this one is built on 12 and 11 each one is a step and it's hard to it's hard to know where we'll be able to go with it we've certainly extended it on every flight did you say you had taken a sample of the white boulder or was that too large to sample

02:16:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8162s)

right surface rocks that were that were right around that area it looked like kind of a secondary impact that had disrupted the surface the two crew members down appreciably now shepard 108 mitchell 86 shepard working harder at this time taking samples while mitchell leveling the magnetometer mission controls being kind to allen explaining away his height high heart how important to the successful completion i mean the total completion of the mission was the idea of getting right to the rim which apparently they have not been able to do well i don't think that you could degrade the mission success a lot of scientific interest in the business of getting to the high ground is always important yes

02:18:11 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8291s)

important yes why haven't they been able to make it i mean the thing was all planned out you know very well in advance and i think what's been the major obstacle to getting there just time well i think uh probably the major difficulty is very interview uh precisely which the best woot and which is the proper direction in order to get to the room in uh the available time yes they are placing their own trail aren't they that's been surprised when we got to what we thought was the top of the hill to find out that there was still another one up there that you had to go up let's listen to them now as they talk seven and a half minutes [Music] okay

02:20:12 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8412s)

always another mountain i suspect there are many scientists back on earth they're anxiously awaiting the from these white rocks i should certainly think so frank it's one of those getting a sample of that uh highland material plus perhaps some of that embryo basin material that's been ejected over there is a very great interesting uh oh two hours and 45 minutes into the second moon walk al shepard and ed mitchell which are working hard not quite able to reach the rim of cone crater working in a large boulder field chipping away with hammers to bring back samples of these unusual white rocks they found on the boulders parts of the boulders and getting photographs

02:22:03 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8523s)

this will be another exciting day we have the lift off and then the docking are they relatively certain there'll be no docking problems down there i believe that they shouldn't have any trouble there's no reason to suspect from the data we have that they don't have a normal normal docking looks like that equipment all should work properly [Music] we hear fred hayes gently telling them to get on their way neil we know that uh you've got other things to do today and we're very grateful to you for uh coming here to talk with us on this i think the most exciting part of the mission so far anyway in terms of their uh exploration of the lunar surface so thank you very very much and very good to have you here with us thank you frank it's been a pleasure and i know those guys are having a great time up there and i i think they're doing a great job i i really look forward to getting them back well we certainly agree with you on that thank you very much neil see you later dale knight nice to see you neil neil and i used to be neighbors and the only time i see him now is on the television screen nice to bring us up to date now two hours and fifty minutes into the second moonwalk al shepard and ed mitchell are near the rim of cone crater but a time working their way through a very large and difficult boulder fields high terrain sloping terrain having found the terrain slopes and inclines higher than they expected and the lunar lighting far more deceptive than anyone expected they have had to stop stop just short of

02:24:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8641s)

they have had to stop stop just short of the rim of cone over here and are photographing and trying to get samples of chips of the rocks with their hammers from these large boulders before turning around mission control is now beginning to urge them to uh get turned around and has dropped some smaller experiments such as the polar metric experiment which will light polarizing photographic experiments using special filters capcom fred hayes has begun to urge them to turn around and get started back toward toward their antares lunar module the next stop will be at station f from and they're going to skip one station to move back to station f down here at a site called weird crater but they're still working up here and have a long way to go before they can make it back to station they've been out now for more than uh two hours and 36 minutes according to the uh count we had just a minute ago from mission control well we'll have more on apollo 14 right after this message someday three astronauts will aboard skylab the first manned space station and on this fantastic shift they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table nutritious tang for breakfast tomorrow this is frank reynolds with frank borman and jules bergman at abc space headquarters in new york this is certainly the most exciting part of this lunar exploration thus far as the astronauts work their way around very close to the rim of cone crater and

[02:26:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8761s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8761s)

very close to the rim of cone crater and let's go back now to our lunar surface relief map here so that we can see exactly where they are and listen to this air-to-ground conversation and recapping here that's happened in the last few hours we're nearly three hours into the second moon walk shepard and mitchell have not been able to reach the rim of cohen have turned around working through this boulder field and capcom fred hayes and mission control are urging them to speed up they've fallen about a half an hour behind their timeline their flight plan schedule let's get shepard now in the air to the ground [Applause] the second moon walk complicated by the fact that they have to also go back to the alpha station from yesterday's first moon walk to adjust the antennae [Applause] [Music] [Applause] or subsequently [Applause] heading module have you checked and uh now without taking any extra time

[02:28:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8881s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=8881s)

and uh now without taking any extra time if you come across any boulders large enough we might fill the top check on the way down if you haven't already done that in the way up [Applause] a bit more [Music] [Applause] breathing hard working hard going downhill picking their way between the boulders trying to find a trail do they have to be disappointed temperature had peaked in the 80s but now reading in the high 60s actual readings in the high 70s you know on apollo 8 we uh we had to take turns sleeping around the moon it seemed so wasteful to get all the way to the moon and then take too much sleep you have to have to make some allowances for the future all right

[02:30:12 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9012s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9012s)

all right um yep they're trying to follow on the way that's somewhat south of the one they took going up to which is right in here [Applause] [Music] [Applause] and if you get the impression they're bringing back more rock samples than anybody they are 135 pounds

[02:32:06 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9126s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9126s)

frank do you think the day will ever come when people on earth will be listening to astronauts somewhere saying well here we're meeting some different people and this is what they look like and here's a picture of it if it happens i sure hope it doesn't come this early in the morning that's the only regret i have about this is that it's all happened so early that think of all the youngsters who probably are missing this that's it you know because that episode up there near the rim was a marvelous marvelous the event and their description was great very good what do you think right do you think astronauts ever will bump into other types i think they will i i think we'll uh someday leave the solar system and probably encounter intelligent life somewhere long after you [Music] just watch everything is the method worked up by the scientists to be sure they can pinpoint where each sample is gathered meanwhile in kitty hawk stu russo has just finished descartes photography

[02:34:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9241s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9241s)

just finished descartes photography for this rev russa didn't use the uh icon lunar topographic camera uh the uh hasselblad with a 500 millimeter lens was used instead meanwhile uh it is undecided uh which camera will be used for the uh rev coming up for this uh photography that is photography of course he's doing frank excuse me descartes is the potential landing site for apollo 16 and they need those high quality pictures that's right operate too so he's had his hands full um [Applause] [Music] all right as the astronauts continue to make their way back toward the loss for a moment we'll have more on a apollo apollo 14 after station identification james coburn stars on the abc monday night movie at luskins you get space age values of

[02:36:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9362s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9362s)

at luskins you get space age values of tomorrow today like the newest philco ford color tv a big 25 inch green color tv luskins down to earth price at only 488 and how about the space age special a vinyl flight bag luskin's moon landing price at only 3.88 so blast off to the luskins near you towson pimlico opposite east point and in glen burnie open every night till 9 30. richard woodmark stars in backlash today at 1. even by pinesol it cleans more than 100 clean because it cleans household germs and good morning once again from the abc space headquarters in new york this is frank reynolds with frank portman and jules bergman the astronauts are making their way back now to the lunar module after going almost but not quite to the very edge of the rim of the cone crater which was of course one of their goals on this mission but they've had they've offered us some fascinating descriptions of what they saw up there to further examine the lunar landscape and to talk about it a bit more we want to go back now to uh houston to uh dr jack mccauley who is with the u.s geological survey and also with our correspondent david snell i believe they're in our houston would appear that we have the rocks here already before us actually these are samples of the apollo 12 rocks but they are something like the kinds of things they've been picking up there jack tell us about it right from the voice descriptions they've been talking about rocks of different sizes and shapes yesterday they were talking about hand specimens what they were referring to as a rock of about this size just conveniently fits in your hands the types of things that are they'll actually be collecting will probably range from this type of thing right down to rather small fragments like this what kinds of things though were they getting up on the as close as they got to comb to the edge

[02:38:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9481s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9481s)

as close as they got to comb to the edge of cone crate well actually that that whole area as we could see from the model was strewn with rather large boulders they described one that was up to 45 feet in length but the thing we didn't see in the model uh are all the small boulders that were below the resolution limit of the photographs that that model was made from so the whole surface was probably strewn with uh things of this sort right here now all of these rocks are grey what are the white rocks they're talking about well this is one of the more fascinating uh returns that we've gotten the um lunar uplands in general tend to have a higher reflectivity they tend to be white one of the objectives of this mission was to try to get material that came from these uh primitive islands from the description it seems that we may have made it i can see some excitement on your part that this is the this is the reason for this area for framar that's right that was the whole objective in simple short terms of going there all right how disturbed are you jack as a geologist that they didn't actually make it to the rim which was the final objective that they couldn't go that last distance well we were aware beforehand that they might have a problem getting up there it's a traffic ability problem and uh it's it's no real uh loss it would have been a bonus if we could have gotten up there one of the nice things that they could have done was to take pictures inside the crater such that we might have been able to detect some layering and one of the things we might have learned from that layering is how thick the framorro is in this area but um just they're getting up onto the rim of this crater and quarrying material from the local subsurface was more than enough and they did the job in a in a highly professional way i must say i'm gratified listening and the white rocks that they talked

[02:40:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9600s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9600s)

and the white rocks that they talked about first of all are they really white is that is it like a bed sheet well they're probably a light gray what we're encountering on the moon is is really a lack of color and the differences that we see are really just shades of gray so to speak from very very light grey onto uh to dark gray so okay thank you very much dr mccauley and dave snell we don't want to miss any of this let's go back now to uh to our map might be a good idea to show you the actual live picture that we're getting from the moon which is the one that we've had up for uh so long before it does but it does not cover the area in which the astronauts are presently deployed and they've been out of sight for some time we have that picture of course but what we've been attempting to do here with our relief map uh and jules over there on the other side of the room here is to show you uh the area where the astronauts are actually working let's go back now i think it gives you a better idea of where the astronauts are let's listen to them frank if we uh to recap briefly uh in between air to ground of shepard and mitchell working their way back this is our little inner visual relief they stopped about here just short of reaching cohen's trailer concrete a rim it is the loss of one of the major scientific goals of the flight they have passed flank crater here on their way back they're way behind their timeline about 40 minutes behind it they have bypassed the scientific sampling and pictures at flank they will likely bypass a trench digging experiment as well and are now about a minute or two from weird crater in this area which is about a halfway back halfway back toward the antares lunar module let's get back to the other ground now that's about three minutes away now from here all right shepard uh reporting there about three minutes away from weird we're going by

[02:42:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9720s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9720s)

minutes away from weird we're going by now we're going north of israel behind that boulder over there anyway right this country is so rolling and undulating for us all right hey back with you okay i think this is

[02:44:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9842s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9842s)

samples this is to give you an idea of the how steep the terrain is and what some of those craters look like this is a cutaway view geologists have made up beginning with a lunar module over here you have to forgive the poor quality of this drawing the lunar module over here and triplet crater going past weird flank up the steep incline of 400 feet to cone crater here and there's the 250 to 350 feet depth to the bottom of cone they never quite got to the rim up here they've bypassed flank on the way back they're now coming alongside weird which small estimate appears to be 80 to 100 feet in depth that's the dramatic view shepard and mitchell are describing now and getting pictures out that's the terrain they're in they're halfway back to the lunar module here let's get the air to ground as they describe a weird crater together okay complete shepherd uh mitchell now at uh weird crater completing their two tasks there to pick up lunar samples and take a photo panorama we're at 134 hours of 48 minutes ground elapsed time three hours since time of cabin depressurization

[02:46:22 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9982s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=9982s)

okay [Music] this crater in here the northernmost of the three craters that make up the triplet body and they're now having passed weird about at this position working their way along this rim headed toward north triplett they're a little more than seven hours away from the actual moment of liftoff from the moon although we're not terribly concerned about that at the [Music] moment

[02:48:05 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10085s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10085s)

[Applause] okay i think we're seeing the rim of the triplet series right ahead of us i would say so yeah the way we've been estimating differences in today that rail has to be at least six miles from here okay here's somewhere about one diameter to the east of the triplet to the welcome [Applause] oh north triplet the crater they're working with now is a very sizable crater it's some 420 to 440 feet in diameter and they're going to first dig punch their core tube in using hammers to get core samples get photographs and hopefully retrieve a football sized rock from here faster on this traverse back

02:50:20 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10220s)

117 okay we've only got [Applause] i mean astronauts are now moving back to uh triplet the crater you see there the northern edge of it is where they're expected to pass by we'll have more on apollo 14 right after this message [Applause] this is a typical meal served to astronauts aboard apollo space flights oatmeal sausage toast applesauce and in a special zero gravity pouch tang the energy breakfast drink orange flavored tang with rich natural flavor and more vitamin c than orange juice energy tang for space men and earth families all right we're back on our relief map now of the moon this is not a live picture of the moon we have a live picture available

02:52:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10320s)

moon we have a live picture available but it does not show us the astronauts and we're employing this which is set up here in our studios in order to give you a good idea of where they are and uh some notion of the terrain they're encountering let's listen now uh running out of time very rapidly and beginning to run low on oxygen in their places their portable life support system backpacks capcom fred hayes has just given shepard mitchell a word that mission control is taking back 15 minutes of that half hour extension they want him back in the limb and as fast as possible so they're going to skip some of the sampling intended to be done at g along this area and here station g each mitchell will do the hammering into the lunar soil well mitchell taking the core tube sample al shepard will be digging the trench [Music] and those are two of the last major experiments left to be performed before getting back to antares the lunar module the core tube sample shepard's digging along here oh rather mitchell's digging along here and the trench the shepherd will dig in this area some 700 feet away from their lunar module

02:54:18 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10458s)

uh [Music] recapping here briefly shepard mitchell are three hours and five minutes or actually about seven minutes into a scheduled four hour and fifteen minute eva that had been extended to four hours 45 minutes has now been subtracted or retrenched if you will to 4 hours 30 minutes they have yet to finish the sampling make their way back to the antares lunar module and thence some 600 feet to the west of antares to re-aim the antenna on the outside the apollo lunar surface experiment package central station then 600 feet back to uh antares before ingressing ending the second moonwalk and getting ready for liftoff okay very good they've made up some of the time they lost working their way up through the rim of conflator which they never quite did jules i make it about another hour and 15 minutes before they uh go back in

02:56:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10560s)

15 minutes before they uh go back in is that right yes that's the way my timeline would work for a tooth frank and they've made it back very rapidly from that boulder strewn plateau and steep sloped uh yes that was near the rim of cone crater which they didn't quite get to uh they must have virtually galloped each of those core tubes 15 inches deep and mitchell reporting he's having trouble driving them in reality uh after they get back in the land they've still got a full day's work cut out for them they have the accent around them and uh that's a busy day why they've dropped a lot of those uh stops and experiments right pardon me i would explain why uh hayes and mission control have had them drop a lot of the experiments and stops on the way back that's right all right we'll take a pause for just a moment we'll have more on apollo 14 after this word from tang if you pull it out they'd like to uh this is houston go ahead imagine living actually living for 56 days in outer space eating and sleeping and working in orbit around the earth go ahead with the coordinates someday three astronauts will right here aboard skylab the first manned space station during this incredible mission they will find out what types of work man can perform during extended flights [Music] and onboard this space shot of the

02:58:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10681s)

and onboard this space shot of the future they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same tang that's on your kitchen table nutritious tang for breakfast tomorrow this is frank reynolds with frank gorman and jules bergman here at abc space headquarters in new york the astronauts making their way back now to their lunar module after this very very long traverse they still have quite some time to spend on the lunar surface more than an hour before they go back inside the land we want to go once again to houston where pete conrad the commander of apollo 12 is standing by to give us his impressions of this mission thus far and this most exciting and fascinating lunar exploration today are you there pete disappointed if you've been out there and had not been able to get right up to the edge of that uh of cone well it it sounds like the country is a little rougher than maybe everybody expected it to be i understand that they've seen boulders as big as 45 feet that's a pretty darn big boulder and how and how they made it back pretty quickly though as far it's easier coming downhill i guess yeah i did i just hear uh ed say he thought he was standing on solid rock yes he as he was taking the core sample he said one one core diameter in he thought he was hitting solid rock pete oh i see well i that's of course what we're hoping for in that part of the country to get down to that type of material and i guess also some of the material from up around cone crater which would be really the the frau moral material that they're looking for we were just mentioning pete that a lot of people uh for most everyone the today's work that they've already done would be a full full day's activity but they've got quite a bit left uh with the liftoff and the rendezvous uh how about could you give us a little idea of

[03:00:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10800s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10800s)

idea of just exactly what that'll involve well of course uh that that's a real shot in the arm the uh just the incentive of the fact that you're gonna start home i that that makes a long day seem a lot shorter i think actually i know on our flight after we got back in that that end of the checklist went quite rapidly and if you remember you bring up the inertial platform about two two and a half hours before liftoff and do your first alignment so the ground can check and make sure that you're going to have a good inertial platform for rendezvous and as i remember it al and i had a good opportunity to stay on the checklist get ahead of ahead of schedule a little bit as we went along and had the opportunity to really just sort of sit around and recap what we've done and relax a little bit so i suspect that they'll be able to take a little rest from the time they get in until the time they lift off yeah pete i'm sorry even now shepard and mitchell after first sounding somewhat winded and overheated as they climbed the slope of uh cone there even now they sound full of energy and yesterday they after the uh difficult dva they sounded positively full of steam and asked for an early beginning to this eva in an extension what gives them all that juice if you will well uh jules i really think i discussed that a little bit yesterday i'm not sure that the doctors would agree with me but i really think by virtue of the fact that your whole internal body is working in this one 6g environment and al and i had the impression i think you really spring back faster you go get yourself winded and get tired but

[03:02:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10922s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=10922s)

get yourself winded and get tired but if you had done the same equal comparable work on the ground weighing your normal weight i don't think that you come back quite as fast on the ground and we very definitely noticed that when we got a little bit tired a little bit winded if we took two or three minutes rest we seemed to spring right back now one of the ways you could i would suspect determine this is to look at their heart rate which of course they're getting on the ground and see how fast the heart rate comes down when they stop to take a rest is eva in itself uh so exhilarating as to well for example sometimes some people call that the conrad hop when they watched you and being a kangaroo leap around but is eva itself so exhilarating that you want to keep it going at it [Music] well i can't say that it's any more exhilarating than anything else you're doing up there but obviously you you psychologically have yourself pointed to these two evas i mean that's what you've done all the training for the the object of the whole mission is to get out on the lunar surface and do as much science and collect as many rocks and and get the job done so you're really pointed to putting your all into this particular part this is the this is the payoff of the whole flight is to be out there on the lunar surface and get the samples and get your al saf running and and and get the job completed pete if you'll just stay there we're going to perform a few electronic uh tricks here and uh superimpose you over the the map we have of the lunar surface and we don't want to miss any of this air to ground okay let's go back to this map time of cabin depressurization and our clock counting down shows uh one hour 12 minutes to go three frames here probably 69 71

[03:04:03 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11043s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11043s)

the first one is the aborted one that i couldn't get in the second one uh second picture is the uh this new attempt at the 15-foot shot and i raised up and took a locator shot on horizon i think it might go very good mitchell's trying to finish the core tube experiment while shepard finishing the penn state experiment jules a minute ago you're talking to pete conrad in describing the conrad hop that he was performing while he was on the moon eva'ing i i think we should note that uh pete hops around quite a bit on earth also and he's uh he's one of the few people that can get through any checklist and half the time is required by anybody else he got the lunar patent rights extended to the earth on the conrad hop now he's hidden rock 13 too apparently completed his uh trench digging task while ed mitchell continuing in this attempt to to drive the triple core sample triple core tube they're they're back uh now just cleaning up the last few experiments before they get back in the in the limb and head for home i of course we weren't fortunate enough to land but uh all of our crew found that as we circled the moon continually the earth began to look more and more appealing did you have that feeling we we had that feeling uh although i i must say we had the opportunity

[03:06:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11160s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11160s)

opportunity to do what you did after we'd been on the lunar surface we really didn't get too good a look at the moon al and i didn't get too good a look at the room right after we got there and i really enjoyed the extra day we had in orbit layer of the trench roger 19. and this is a trench shepherd's been digging some 500 feet east of the antares lunar module along the north wall of north triplette that's two interesting points there frank we uh we came back and said you could dig as deep as uh as you gave the person a tool as long as they didn't run into hard material the other thing is in all our trenches the sides never fell in so they finally got to a point where al is missing here the sides fell in so he was hoping to get down two feet and it sounds like he got down a foot and a half on the intent of course your feet is to get a stratified layer a cutaway view layer if you will of the surface and then inch by inch all the way down to see the action of solar erosion and meteorite strikes on lunar soil and rocks

[03:08:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11282s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11282s)

on lunar soil and rocks yeah i i think that's one of the things that the scientists would really like to determine and that is the process that makes this fine lunar material i'm not sure we completely understand what's made at all we certainly understand uh now though that the moon is a very different place in different areas uh you're just versus the experience of apollo 12 and apollo 14 that were vast differences in the terrain well i don't think you need the exercise uh you might as well extract it now i don't need any more exercise of course one one of the difficult things here i think is to get a a map before you go uh we had some of the best photography of our landing site which had a resolution of about one meter now uh the photography they've been working from has a resolution of about two meters and i think that we could foresee some of the the difficulties that they encountered we could foresee this in a defeat to start with you know the resolution of the photography we had was better now apollo 15 they have their landing site there so you know if they get a big surprise when they get there with the terrain you got to realize that they're working with a lot more photography of that particular landing site than we did and even much more than what these guys have to work with before they went yes thank you pete we'll be right back to you in just a moment we want to pause for just a moment we'll have more on apollo 14 right after this message training underwater for an incredible mission in outer space 56 days in orbit aboard skylab the first manned space station and two lonely space walks around it on this amazing space shot of the future

[03:10:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11401s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11401s)

this amazing space shot of the future they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table tang for breakfast tomorrow we'll be back with more on the flight of apollo 14 after station identification then backlash today at 1. my clock highly unofficial though it may be with they're about an hour away now from uh re-entering the lunar module and that will complete the second and final eba we want to go back to our lunar map here and bring in pete conrad once again who's standing by houston we'll pick up more of this air-to-ground conversation pete feel free to comment as we go and uh three i think this is about the time you'd like to be a lunar octopus and have eight hands yes shepard will perform the panoramic photography and now when you get done with the pan i guess it's still like the uh fcsc sample uh from the bottom of the trench probably at the bottom we talk about adjusting our priorities here on earth they really have to make some decisions up there don't they with the time available to them [Music] yes i'm i'm sure that uh that that was a difficult decision not to continue under the edge of tone crater because

[03:12:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11520s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11520s)

the edge of tone crater because you certainly like to get to the end of where you plan to go but after all the uh almost all these timelines are are so full in the hope that you can accomplish it you can't look at this as a uh lack of performance or something uh you know yourself feat that everybody takes more than they can do well well frank i think that's a real good point in the flight test business we always put 125 on the card i really do feel that i'm not sticking the needle in anybody but in the space business with everybody watching and not all as knowledgeable as the people that work at it every day sometimes if you have 125 percent in that type card they they don't think that you got everything done but the world's worst thing to do would be to be up there and run out of things to do yes pete what was it that you would like to have done up there while you were there had you had more time [Music] well uh i think that we would have liked to uh gone out in a different direction uh from the from our vehicle where we landed we were on what was called a copernican ray and it was in a particular area where where the ray we had several opportunities say to cross where they thought that ray actually ejected like is what i should say you can see it as a ray pattern in the photographs of the moon we would have liked to go in several different directions to ensure that we got material off of both and of course again something like this rock 13 which turned out to be so different than everything else perhaps we would have gotten more of those type rocks and been able to pin down a contact here pete since you've refused to produce a rock 13 i thought i'd update us a little bit here we're three hours and 30 minutes into the second moon walk uh

[03:14:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11640s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11640s)

the second moon walk uh shepard has just about finished the trench while uh ed mitchell has finished the coral experiment they've got about seven minutes of work seven minutes of work more left here we should say at the north triplet crater which is around 540 feet by our calculations from the ontario's lunar module when they get back to antares they're going to drop off the met and the samples and pictures they've gathered and they have yet to return to this area west of antares out here uh to the where alsip the apollo lunar surface experiments package is deployed to check the antenna and re-tune it if you will or re-point it to get a better signal back to earth so they've got at least an hour to an hour 15 minutes more of hard work to do and you can tune in they're still picking up rocks and samples at this north triplet site before working their way back still getting the bottom of the drink okay documentation

[03:16:09 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11769s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11769s)

al shepard digging into the trench again in an effort to acquire a sample from the bottom we're at 135 hours 22 minutes of ground elapsed time three hours 33 minutes since time of cabin depressurization our countdown clock shows 56 minutes remaining on this second lunar excursion here we have about three and a half five minutes uh left that uh triplets and they've got to go all the way back out to the outside okay there is a special request uh rather than grab samples at the uh crater rim there they'd like to get a documented sample of a partially buried rock but it looks pretty big i think maybe i can get it anyhow you're seeing now the real time inputs of houston as they start to ask for specific items and specific rocks based upon the uh the experience today pete they're apparently able to bring back about two and a half times the the weight of rocks you and al bean brought back on apollo 12. that's right jules uh again like anything else uh the first couple of trips up from the moon uh we're figuring theoretical values we haven't had looks at real asset engine burns so forth

[03:18:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11880s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=11880s)

burns so forth as i remember on our flight we had some 700 feet per second remaining after shut off and they have upped the payload capability uh and i think uh again with another burn and a bigger payload they'll take another look at the numbers and of course they've improved the j mission lam 2 so the uh the limbs after apollo 14 have even a little more capability to bring back more material 135 pounds of rocks i think was the final total that worked out how many pounds did you get back we got back just under 80. uh also if you remember though we had another to 25 pounds or so surveyor parts the tv camera off the surveyor weighed 17 pounds and we had a couple of extra sample cans to bring back some of the surveyor parts in and i think all told that i as i remembered our payload capability was like 110. and these rocks apparently will be at least as old if not older than the the rock that didn't fit the pattern of all the rest that rock 13 i've been kidding you about yeah i i think that really would be a very significant find you see the rocks uh from our flight and the rocks from apollo 11 are different from one another but they are cousins and just like all of them are cousins to earth rocks so this flight if they found a rock that was similar to rock 13 that's really a big tie and would answer many of these questions that we've brought up really just by going to the moon would begin to tie things together a little bit all right thank you very much pete we're going to pause for just a moment here but we'll continue with our coverage of the mission of apollo 14 more on apollo 14 after this word from

[03:20:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12001s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12001s)

more on apollo 14 after this word from buffering space headquarters less than an hour now before the astronauts have to return to the uh lamb that is according to the schedule laid out for them by houston and they are very busy at this point picking up rocks photographing them obtaining more samples i got the impression just a moment or so ago that they were they had a couple that they might have a little difficulty pushing down into the uh the sample bag let's go back now to our lunar uh release of the larger large rock that ed mitchell was struggling with there frank and uh we'll be glad that we missed that bit of air-to-ground got to look pretty good about now after all this time working and climbing and what you're looking at is not of course the lunar surface we have another picture that is available to us but it doesn't show us anything except an empty expanse and the reason that we're staying with this map is because it helps to identify some of the lunar television picture from the moon the astronauts positioned the camera uh before they left on this eva we might be able to see them coming back in we will see them coming back franklin got another minute yep

[03:22:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12124s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12124s)

okay oh the shiny damn damn huh [Applause] is okay okay the astronauts are making their way back now to the uh lamb we should be able to see them come in uh before too long we'll have more on apollo 14 right after this [Music] dirt message the morning as few men have seen it the sight of our own planet coming up over a strange horizon in space earth rise

[03:24:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12242s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12242s)

now two more men will see it and with them tang the orange flavored instant breakfast drink with more vitamin c than orange juice nutritious tang for space men and earth families all right here we are now uh back on our lunar relief map you see here the model of the lamb that we've in place there now let's go and take a moment but uh before too long we ought to be able to see the astronauts perhaps coming back into the picture here they've already been told that it's going to be tight on the closeout so times are moving along here and they're tired and by best guess frank they're six or seven hundred feet still east of the uh antares lunar module and uh right on back to the limb area the bright lights we're seeing are the refracted uh image of the sun bouncing around the lens of the live westinghouse colored etv camera which is showing us this picture the camera is pointed toward cone crater which is at the upper right hand corner of the picture we should see shepard and mitchell begin to reappear in the picture in from one to three or four minutes it's impossible to guess exactly when uh at the right hand side of the picture okay it sounds to me like uh several of the pieces of equipment in the met popping out of it it does indeed be it also sounds to me judging by some of the colorful language we've done to hear that al and ed are getting very tired of the uh

03:26:05 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12365s)

of the uh pete that met uh is invaluable though isn't it uh well they wouldn't have been able to bring back all the stuff they've got uh yeah it certainly is but i kind of have the idea that if they're really moving in a hurry that the med is uh airborne part of the time and so there's a lot of a lot of the equipment that's on top of it of course most of it you can strap down but i think they probably have these core tubes in some of those big bags and they probably have a tendency to hop out and fall on the lunar surface that's right it's like a loose trailer attachment on a car bouncing on a rough road it weighs so little right pete speaking of bags i know that you and al came back and suggested they put a water bag in the suit i imagine that's been very very helpful on this mission uh five hours without a drink of water would seem to be almost an impossibility when you're working the way they are well really the only discomfort we had was we did tend to get a little bit thirsty also you realize the air in the suit is quite dry and we should begin to see them you can proceed uh [Applause] uh

03:28:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12482s)

[Music] on the first moon walk i was trying to say yesterday they indicated that they were on you could see that they were quite picked up an awful lot of dust and the reason we're not seeing them now is that uh the camera is fixed north of the met pointing west level [Music] separate on his way out to the alpha to a line level and ria retune if you will the antenna that carries the radio signals from the scientific experiments from the moon back to the earth you know jules everybody has something that that you do that that's very difficult for the individual and i had the job of aligning the antenna on our lsat i'm going to photograph many of the different fragments boulders i can around these piles of broken boulders now that i'm here i see a large number of inclusions i can't tell whether they're crippled or not i think that they are and i'll grab as

03:30:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12602s)

i think that they are and i'll grab as many of these and give you before and after shot in that case way back okay that sounds great that's of course mitchell pete gathering more rock samples and soil samples even as al shepard goes out to reset the uh also all right with mitchell taking photographs to the rocks and al shepard on his way out to the all-star package we'll pause for a moment we'll have more on apollo 14 after this word from tang [Music] underwater for an incredible mission in outer space 56 days in orbit aboard the first manned space station and two lonely space walks around it nasa trains them underwater in space suits with full equipment load because zero gravity is simulated here better than anywhere else on earth and once they're walking in free space outside of the space station this training could mean the difference between success and disaster inside the skylab they will have all the comforts of home a bedroom a bathroom a work room a kitchen and they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table nutritious tang for breakfast tomorrow morning the flight of apollo 14 after station identification erskine infiltrates aspiring on the fbi tomorrow night rash today at 1 breakfast tomorrow and by new formica floor shine it's even harder than i've color television picture from the moon from the surface it is empty at this point we expect before too long to see ed mitchell moving into uh view al shepard is still

03:32:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12720s)

moving into uh view al shepard is still out of the alsup package retuning it and he has been told that he has about two or three minutes remaining to stay there before heading on back to the vicinity of the land they've been out nearly four hours now frank and they want the mission control once this eva ended by four and a half hours which means by the time they make it back to the lemon 10 or 15 minutes clean off the accumulated dust and dirt uh reingress that's a half hour tour right there [Applause] capcom fred hayes asked me to turn the tv now pointed toward the east toward cone crater uh to the south so the seat you'll see the line on the mesa as they load it up and we'll see the camera move in a minute a shepard i can see the next requirement will be for a portable television camera so that we can accompany them on all their traverses might be great that would be wonderful i told you that years ago frank sure ah jules i believe the rover has a portable tv camera yes it does the one drawback uh there's the camera moving now peter okay russians didn't steal it they've

[03:34:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12840s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12840s)

russians didn't steal it they've activated lunacar today yes and as a matter of fact this morning the designer of lunacar took a blast at apollo 14. al shepard positioning the camera 800 miles away of course but it's an anonymous designer soviet designers are always anonymous says that almost all the work shepard and mitchell have done on this far could have been done much more cheaply by automatic equipment such as lunacopte i know pete conrad agrees with that yeah thanks a lot could you say that sounds suspiciously like sour grapes they're so crude about it you know their timing is so awesome well i'm sure there are great many people in the soviet union and scientific circles that recognize and congratulate this achievement we need to proceed now with the regular uh on the next apollo flight apollo 15 in late july does have a camera to uh shepard uh moving across our picture to show us live photograph the solar wind composition experiment jules i was saying earlier the most difficult task i had to do with the lsap was to align the antenna for some reason that mechanism and i were not compatible and i even had to get a a copy of it and i had it on my desk for four months before the flight when i was sitting there thinking i'd practice aligning the bubble

[03:36:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12960s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=12960s)

practice aligning the bubble and when we aligned i i worried about that so much i stayed up at night worrying about getting out of line they don't have an input okay the last uh just and these are still pictures being shot of the solar wind experiment a long aluminum foil-like device designed to record the impacts of solar particles mutual in the foreground of our picture shepard further in the background on the other side of the land they look very dirty to me the lunar overshoes are suspiciously grey to a high height peak so you don't have to bother removing the magazine from it uh you can just put the whole camera in the atp okay and i guess so you don't get confused uh that means we'll be bringing back smoke campus oh okay still cameras in and uh not to be taken

[03:38:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13081s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13081s)

ah that's the time man okay that's the equipment transfer that i use loading cameras in okay so hey is

[03:40:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13202s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13202s)

is watch this golf shots [Music] one more miles and miles and miles very good now and that's another historic first frank now that we've had the golf lesson uh on the lunar surface yes pete conrad i know you've got some other things to do now so uh we want to thank you very much for taking the time to drop by our set up there in houston and talk with us this morning it's been very good having you with us and having your observations about this epa thank you very much pete let's do it see you around next time bring rock 13 feet okay flight ebay that last scene al shepard becomes the first lunar golfer

[03:42:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13321s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13321s)

first lunar golfer okay um one additional item uh on the return is to bring back the 100 foot tether that should also go on etv framed and just playing it safe they want the 100 foot tether back in case there's trouble docking with the command mod you only have to do it a spacewalk or an eva the tether would be used to tie the command module and the antares lunar module together no sign of any trouble at this point with that docking scheduled to take place just after 3 pm this afternoon but mission control is playing it safe

[03:44:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13440s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13440s)

oh all right while the astronauts are preparing now to re-enter the lamb finishing up their worker there on the lunar surface we'll pause for a moment we'll have more on apollo 14 right after this message you see astronauts shepard and mitchell there a will be re-entering the lamb and uh oh they've got about 21 22 minutes yet before they're supposed to be back inside and they've been in the second moon listen to them now they're packing sample containers recapping our action here for the benefit of those who joined us late we were four hours and 10 minutes into the second moon walk al shepard ned mitchell made it almost to the rim almost to the top of cone crater 4 500 feet away from the lunar module performed a series of scientific experiments gathering rock samples core samples digging trenches made their way back to the lunar module where we're seeing them now the live color tv camera on the moon samples realigned the antenna on the outside scientific package and are now loading the rock boxes and sample containment at the limb at their antares lunar module preparatory to taking them aboard and boarding themselves

[03:46:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13562s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13562s)

boarding themselves getting rid of the liftoff of ramon later today to rejoin the kitty hawk command module with stew rooster which has been orbiting the moon all this past day and a half while they've been on the moon their liftoff scheduled uh for 1 47 p.m eastern time this afternoon in a bit of historic lunacy you might call it oh come on shepard took four golf balls to the moon with him and uh he hit a couple of them out slicing slicing historically there blasted the four golf balls would certainly have to be record drives frank certainly one sixth g i suppose we could figure it out a 200 foot smash might go uh untold distances if russians ever land on the moon and pick up a golf ball there's a first the russians can't claim they didn't put the first golf ball on the moon actually that really wasn't entirely a trivial demonstration i can remember not too many years ago there wasn't a pressure suit in existence that would allow you to even to move your arms let alone swing it like that and i couldn't help but think as i watched that demonstration how far we've come in the design of a spacesuits we are six hours from liftoff six hours from liftoff we'll be on the air of course to bring you full report on that this afternoon shepard and mitchell at each uh walked and galloped and moon hopped if you will some 13 to 14 000 feet almost three miles each in the last day on these two moonwalks all right as they continue to finish up their work on the lunar surface we'll pause for a moment we'll have more on apollo 14 right after this message

[03:48:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13680s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13680s)

on apollo 14 right after this message imagine living for 56 days in outer space in orbit around the earth someday three astronauts will aboard skylab the first manned space station and on this fantastic shift they will have tang the orange flavored instant breakfast drink with more vitamin c than orange juice the same thing that's on your kitchen table nutritious tang for breakfast tomorrow hey you the 100 foot tether being brought back this uh to tie down some gear the present plan is to bring back the probe [Music] we're at 135 hours correction 136 hours ground elapsed time and we show uh four hours 11 minutes since a time of depressurization

[03:50:04 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13804s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13804s)

is we got um uh four and a half is beautiful okay okay uh ed i didn't hear the solar wind call off there did you get that one still yep

[03:52:18 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13938s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=13938s)

that javelin looking throwaway item was uh possibly the solar wind pole [Applause] to make sure you got four 70s and four sixteen millimeter mags i guess one of the 70s is on the camera a tedious job but uh it's important that no experiments no sample bags or whey bags or magazines be left behind on the moon and the 100 foot tether they've been talking about it was the emergency road in case one of them had fallen down and cone crater which they didn't quite reach it will be used in case an emergency eva is necessary

[03:54:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14041s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14041s)

is necessary to join both vehicles and also to tie down the docking probe that the engineers in houston want to try to figure out what did go wrong sunday night in the first documentary mitchell going up the ladder and now what happened there is that some item thrown away hit the camera and knocked it over frank unless i'm mistaken well the cable equal his foot court on the cable knocking the camera down to its tripod ed mitchell is sending a ladder back over here it's okay shepard's going out to set the camera back up okay the television camera shepard up riding the television camera which was knocked over okay um

[03:56:08 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14168s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14168s)

rip [Applause] 114 shepard's heart rate now reading 108. see as al shepard prepares to uh go up the ladder and re-enter the lamb we'll pause for a moment we'll have more on apollo 14 right after this message more than a quarter of a million miles away and yet earth's nearest neighbor in space man has fed his imagination on it since the beginnings now he has set foot there leaving his tracks in the lunar quiet and with him tang the orange flavored instant breakfast drink with more vitamin c than orange juice nutritious tang for space men and earth families more on the flight of apollo 14 after station identification flash today at one string for breakfast tomorrow and by buffering so fast to your headaches so

[03:58:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14282s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14282s)

buffering so fast to your headaches so gentle on your stomach on the surface there is al shepard at mitchell has already re-entered the lamb they're now operating the pulley to return some of the treasures they have gathered on the surface of the moon to the lamb before shepherd goes back on board and they prepare for the liftoff which will be in less than six hours from now they're wrapping up their the second and most exciting eva sea shepherd moving around there at the base of the lamb and they sent the sample containers the rock boxes soil containers film magazines all up being sure they don't leave any behind one film magazine was inadvertently left behind an earlier flight the alsip the apollo lunar scientific experiment package antenna that shepard had to realign uh he did realign it and houston's getting good signal that's all straightened out left behind the lunar surface is a lot of junk including the met the modular equipment transporter which we can see in the foreground okay i'll bring it down see shepard working the conveyor belt there the transfer of materials via conveyor belt is continuing huh okay

[04:00:02 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14402s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14402s)

but now shepard and mitchell pushed on after a brief stop at a second survey site they began their assault on cone crater a climb not only toward the summit of a lunar mountain but back through time a large crater acts in many respects like a drill throwing out material from deep beneath the surface this material should be very different from any we've collected before perhaps dating back to the origins of the moon and even the solar system and we're starting uphill now we're fairly gentle at this point but it's definitely uphill by the way pull up beside this big crater take a break get the map see if we can find out exactly where we are the maps they were using had been made from photography from lunar orbit the hummocks craters bridges and boulders took on a new appearance when seen from the surface looks like it's got a flat over there the way it's leaning [Music] [Applause] getting pretty steep al's got the back of the mitt now and we're carrying it up i think it seems easier but i tell you we're really going to get a panorama we've got a tremendous one here [Applause] here

[04:02:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14521s)](https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14521s)

here okay well now that's apparently the river cone over there and um now they were working against time against the oxygen and water left in their backpacks against the alien terrain topper ridge thinking it's the rim of the crater and there's another ridge ahead of you i don't think we'll have time to go up there oh let's give it a whirl dude we can't stop without looking at this cold crater okay we'll press it on little brother houston and [Applause] right now we um a 30-minute extension looks like we'll be approaching them here very shortly standing in a boulder field surrounded by rocks 10 to 12 feet long the astronauts made their most difficult decision with the concurrence of mission control they stopped their climb less than 150 feet from the edge to begin the more important job of collecting samples the crew had no way of realizing they were so close it was a week after the mission before we determined this by photographic analysis while they could overcome the terrain they could not beat the steady drain of oxygen from their backpacks

04:04:00 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14640s)

oxygen from their backpacks in the terms of scientific meaning the decision not to go on to the rim meant little in human terms a great disappointment one of these boulders is uh broken open they're really brown boulders on the outside the interface that's broken is white and there's another one that most of it is white they are right in the same area [Music] the white rock is of different composition of the apollo 11 and 12 rocks in fact the chemistry of all the rocks that have been looked at so far is different to those rocks potassium and uranium are 10 times higher which are the sort of values we might expect if the promo rocks represent ancient lunar crust which of course is what we're all hoping again it was time time to head back to the lunar module we're approaching the room now [Music] after a quick side trip to check on the science station they loaded the lunar module with samples and data and stepped off the lunar surface the second expedition had lasted four hours and 35 minutes a total exploration of a record nine and one half hours thirty three and a half hours after they landed alan shepard and edgar mitchell lifted off in the silent vacuum of the moon is armed six five [Applause] [Music]

04:06:09 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14769s)

good houston roger you're looking good from down here i'll hop on one minute half an hour later stuart russo watched their progress from kitty hawk what are you doing way down there oh fearless one you've lost a little weight since the last time i saw you oh [Applause] okay make it smooth [Applause] and around we go show us a little style [Applause] oh you look good there i was at 240 000 coming over the top that's our homeboy home would you believe 360 000. yeah kitty hawk is doing an extremely smooth loop we're sitting at 70 feet watching him go around he looks very clean the inspection complete antares and kitty hawk move together for docking apollo 14 this is houston here go for the docking roger we got you [Applause] okay we captured

04:08:01 (https://www.youtube.com/watch?v=MPh-s1Di7Io&t=14881s)

and we got a heart doctor they transferred the gear from antares to kitty hawk buttoned up the tunnel then jettisoned the lunar module it would crash into the moon at a predetermined spot its impact picked up by their seismometer and the seismometer left by apollo 12 over a year earlier 149 hours after they left earth they performed the burn that broke them out of lunar orbit during the coast to earth there would be time to catch up on sleep relax and do all the little things left undone and there was one more item a series of scientific demonstrations in zero gravity demonstrations impossible to reproduce on earth these trials looked at basic physical properties of matter in zero gravity studies that could lead eventually to new materials manufactured in space for use on earth

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